

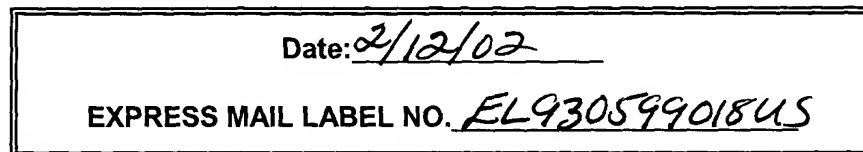
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Todd R. Golub, Eric S. Lander, Jill Mesirov, Donna Slonim, and  
Pablo Tamayo

Divisional of:  
Application No.: 09/544,627

Filed: April 6, 2000

Title: METHODS FOR CLASSIFYING SAMPLES AND ASCERTAINING PREVIOUSLY  
UNKNOWN CLASSES



INFORMATION DISCLOSURE STATEMENT

Assistant Commissioner for Patents  
Washington, D.C. 20231

Sir:

This Information Disclosure Statement is submitted:

- ☐ under 37 CFR 1.129(a), or  
(First/Second submission after Final Rejection)
- ☒ under 37 CFR 1.97(b), or  
(Within any one of the following time periods: three months of filing national application (other than a CPA) or date of entry of the national stage in an international application; or before the mailing date of a first office action on the merits in a non-provisional application, including a CPA, or a Request for Continued Examination).
- ☐ under 37 CFR 1.97(c) together with either:
- ☐ a Statement under 37 CFR 1.97(e), as checked below, or
- ☐ a \$180.00 fee under 37 CFR 1.17(p), or  
(After the 37 CFR 1.97(b) time period, but before final action or notice of allowance, whichever occurs first)
- ☐ under 37 CFR 1.97(d) together with:
- ☐ a Statement under 37 CFR 1.97(e), as checked below, and
- ☐ a \$180.00 fee under 37 CFR 1.17(p), or  
(Filed after final action or notice of allowance, whichever occurs first, but on or before payment of the issue fee)
- ☐ under 37 CFR 1.97(i):  
Applicant requests that the IDS and cited reference(s) be placed in the application filewrapper.  
(Filed after payment of issue fee)

Statement Under 37 CFR 1.97(e)

- ☐ Each item of information contained in this Information Disclosure Statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement; or
- ☐ No item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the undersigned, after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of this Information Disclosure Statement.

Statement Under 37 CFR 1.704(d) (Patent Term Adjustment)

Applies to original applications (other than design) filed on or after May 29, 2000

- ☐ Each item of information contained in the Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart application and this communication was not received by any individual designated in § 1.56(c) more than thirty days prior to the filing of the Information Disclosure Statement.
- ☒ Enclosed herewith is form PTO-1449:
  - ☐ Copies of the cited references are enclosed.
  - ☒ Copies of cited references are enclosed except those entered in prior application, U.S. Application No. 09/544,627, to which priority under 35 U.S.C. 120 is claimed. The earlier application contains copies of the cited references.
  - ☐ The listed references were cited in the enclosed International Search Report in a counterpart foreign application.
  - ☐ The "concise explanation" requirement (non-English references) for reference(s) [       ] under 37 CFR 1.98(a)(3) is satisfied by:
    - ☐ the explanation provided on the attached sheet.
    - ☐ the explanation provided in the Specification.
    - ☐ submission of the enclosed International Search Report.
    - ☐ submission of the enclosed English-language version of a foreign Search Report and/or foreign Office Action.
    - ☐ the enclosed English language abstract.

☒ Applicant requests that the following non-published pending applications be considered:

Examiner's  
Initials

\_\_\_\_\_ U.S. Patent Application No. 09/525,142, by Pablo Tamayo, Jill Mesirov, Eric S. Lander, and Todd R. Golub, filed March 14, 2000, Docket No.: 2825.1014-001.

\_\_\_\_\_ U.S. Patent Application No. [     ], by [inventor(s)], filed [     ], Docket No.: [     ]

\_\_\_\_\_ U.S. Patent Application No. [     ], by [inventor(s)], filed [     ], Docket No.: [     ]

\_\_\_\_\_  
Examiner

\_\_\_\_\_  
Date

☐ A copy of each above-cited application, including the current claims, is enclosed.

☒ A copy of each above-cited application, including the current claims, is enclosed, except those entered in prior application, U.S. Application No. 09/544,627, to which priority under 35 U.S.C. 120 is claimed.

The Examiner is requested to return a copy of the above list of pending applications indicating which references were considered with the next office communication.

It is requested that the information disclosed herein be made of record in this application.

Method of payment:

☐ A check for the fee noted above is enclosed, or the fee has been included in the check with the accompanying Reply. A copy of this Statement is enclosed.

☐ Please charge Deposit Account 08-0380 in the amount of \$[     ]. A copy of this Statement is enclosed.

☒ Please charge any deficiency in fees and credit any overpayment to Deposit Account 08-0380.

Respectfully submitted,

HAMILTON, BROOK, SMITH & REYNOLDS, P.C.

By 

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Dated: 2/12/02

PTO-1449 REPRODUCED				ATTORNEY DOCKET NO. 2825.1018-010		APPLICATION NO.	
<b>INFORMATION DISCLOSURE CITATION IN AN APPLICATION</b>  <b>February 12, 2002</b> (Use several sheets if necessary)				APPLICANT Todd R. Golub, et al.			
				FILING DATE February 12, 2002		GROUP	
<b>U.S. PATENT DOCUMENTS</b>							
EXAM- INER INI- TIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB- CLASS	FIGURE DATE IF APPROPRIATE
	AA	5,040,133	08/13/91	Feintuch et al.	364	581	
	AB	5,179,643	01/12/93	Homma et al.	395	140	
	AC	5,631,734	05/20/97	Stern et al.	356	317	
	AD	5,734,796	03/31/98	Pao	395	22	
	AE	5,770,722	06/23/98	Lockhart et al.	536	25.3	
	AF	5,819,245	10/06/98	Peterson et al.	706	16	
	AG	5,832,182	11/03/98	Zhang et al.	395	10	
	AH	5,871,697	02/16/99	Rothberg et al.	422	68.1	
	AI	5,925,525	07/20/99	Fodor et al.	435	6	
	AB						
<b>OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)</b>							
	AR	Borrow, Julian, et al., "The t(7;11)(p15;p15) translocation in acute myeloid leukaemia fuses the genes for nucleoporin NUP98 and class I homeoprotein HOXA9," <i>Nature Genetics</i> , 12(2): 159-167 (1996).					
	AS	Buccheri, Valeria, et al., "mb-1: A New Marker for B-Lineage Lymphoblastic Leukemia," <i>Blood</i> 82(3): 853-857 (1993).					
	AT	Chu, S., et al., "The Transcriptional Program of Sporulation in Budding Yeast," <i>Science</i> 282: 699-705 (1998).					
	AU	Cole, Kristina A., et al., "The genetics of cancer-a 3D model," <i>Nature Genetics</i> 21 38-41 (1999).					
	AV	Eisen, Michael, B., et al., "Cluster analysis and display of genome-wide expression patterns," <i>Proc. Natl. Acad. Sci.</i> 95: 14863-14868 (1998).					
	AW	Ermolaeva, Olga, et al., "Data management and analysis for gene expression arrays," <i>Nature Genetics</i> 20: 19-23 (1998).					
	AX	Huang, Shang-Yi, et al., "Clinical, haematological and molecular studies in patients with chromosome translocation t(7;11): a study of four chinese patients in Taiwan," <i>British Journal of Haematology</i> , 96: 682-687 (1997).					
	AY	Iyer, Vishwanath R., et al., "The Transcriptional Program in the Response of Human Fibroblasts to Serum," <i>Science</i> 283: 83-87 (1999).					
EXAMINER				DATE CONSIDERED			

JCB69 U.S. PTO  
 10/074789  
 02/12/02

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OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)			
AZ	Khan, Javed, et al., "Expression profiling in cancer using cDNA microarrays," <i>Electrophoresis</i> 20: 223-229 (1999).		
AR2	Khan, Javed, et al., "Gene Expression Profiling of Alveolar Rhabdomyosarcoma with cDNA Microarrays," <i>Cancer Research</i> 58: 5009-5013 (1998).		
AS2	Kononen, Juha, et al., "Tissue microarrays for high-throughput molecular profiling of tumor specimens," <i>Nature Medicine</i> 4: 844-847 (1998).		
AT2	Kroon, Evert, et al., "Hoxa9 transforms primary bone marrow cells through specific collaboration with Meis1a but not Pbx1b," <i>The EMBO Journal</i> 17(13) 3714-3725 (1998).		
AU2	Lander, Eric S., "The New Genomics: Global Views of Biology," <i>Science</i> 274: 536-539 (1996).		
AV2	Nakamura, Takuro, et al., "Fusion of the nucleoporin gene NUP98 to HoXA9 by the chromosome translocation t(7;11)(p15;p15) in human myeloid leukaemia" <i>Nature Genetics</i> 12: 154-158 (1996).		
AW2	Spellman, Paul T., et al., "Comprehensive Identification of Cell Cycle-regulated Genes of the Yeast <i>Saccharomyces cerevisiae</i> by Microarray Hybridization <sup>n</sup> ," <i>Molecular Biology of the Cell</i> 9(12) 3273-3297 (1998).		
AX2	Tamayo, Pablo, et al., "Interpreting patterns of gene expression with self-organizing maps: Methods and application to hematopoietic differentiation," <i>Proc. Natl. Acad. Sci.</i> 96: 2907-2912 (1999).		
AY2	Tavazoie, Saeed, et al., "Systematic determination of genetic network architecture," <i>Nature Genetics</i> 22: 281-285 (1999).		
AZ2	Törönen, Petri, et al., "Analysis of gene expression data using self-organizing maps," <i>FEBS Letters</i> 451: 142-146 (1999).		
AR3	Watson, Andrew, et al., "Technology for microarray analysis of gene expression," <i>Biotechnology</i> 9: 609-614 (1998).		
AS3	Yang, George P., et al., "Combining SSH and cDNA microarrays for rapid identification of differentially expressed genes," <i>Nucleic Acids Research</i> 27(6): 1517-1523 (1999).		
AT3	"Affymetrix Launches New Genome Scanning Genechip® Expression Products," [online], September 1998 [retrieved on 1998-10-14]. Retrieved from the Internet:<URL: <a href="http://www.affymetrix.com/press/pr980918.html">http://www.affymetrix.com/press/pr980918.html</a>		
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AU3	Stipp, D., "Gene Chip Breakthrough," [online], March 1997 [retrieved 1998-10-15]. Retrieved from the Internet:<URL: <a href="http://www.pathfinder.com/@@NJC11CgcA1QLIOjS3/fortune/1997/970331/bio.html">http://www.pathfinder.com/@@NJC11CgcA1QLIOjS3/fortune/1997/970331/bio.html</a>		
AV3	Zheng, P. et al., "Proto-oncogene PML controls genes devoted to MHC class I antigen presentation," Nature 396:373-376, (11/26/98).		
AW3	Lockhart, D.J. et al., "Expression monitoring by hybridization to high-density oligonucleotide arrays," Nature Biotechnology, 14:1675-1680, (December 1998).		
AX3	DeRisi, J.L. et al., "Exploring the Metabolic and Genetic Control of Gene Expression on a Genomic Scale," Science, 278:680-686, (October 1997).		
AY3	Lashkari, D.A. et al., "Yeast microarrays for genome wide parallel genetic and gene expression analysis," Proc. Natl. Acad. Sci. USA, 94:13057-13062 (November 1997).		
AZ3	Miyata, Y. et al., "Phosphorylation of the immunosuppressant FK506-binding protein FKBP52 by casein kinase II: Regulation of HSP90-binding activity of FKBP52," Proc. Natl. Acad. Sci. USA, 94:14500-14505, (December 1997).		
AR4	Kok, K. et al., "A gene in the chromosomal region 3p21 with greatly reduced expression in lung cancer is similar to the gene for ubiquitin-activating enzyme," Proc. Natl. Acad. Sci. USA, 90:6071-6075 (July 1993).		
AS4	Wodicka, L. et al., "Genome-wide expression monitoring in Saccoarmyces cerevisiae," Nature Biotechnology, 15:1359-1367 (December 1997).		
AT4	Jin, Y. et al., "Molecular cloning of a 25-kDa high affinity rapamycin binding protein, FKBP25, J.Bio.Chem., 267(16):10942-10945, (1992).		
AU4	Pennisi, E., "DNA Chips Give New View of Classic Test," Science, 283:17-18, January 1999.		
AV4	Jobson, J.D., "Cluster Analysis" in Applied Multivariate Data Analysis, Volume II: Categorical and Multivariate Methods, (NY:Springer-Verlag) pp. 518-568 (1992).		
AW4	Gordon, A.D., in Classification--Methods for the Exploratory Analysis of Multivariate Data, (NY:Chapman and Hall) pp. 1-53.		
AX4	Kohonen, T., Self-Organizing Maps, 2nd Edition, T.S. Huang et al., eds. (NY: Springer-Verlag, 1997).		
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	AY4	Loos, H.S. and B. Fritzke, "DemoGNG (Version 1.5), [online] [Retrieved 1999-01-29]. Retrieved from the Internet:<URL: <a href="http://www.neuroinformatik.ruhr-uni-bochum.de/ini/VDM/research/gns/DemoGNG/GNG.html">http://www.neuroinformatik.ruhr-uni-bochum.de/ini/VDM/research/gns/DemoGNG/GNG.html</a>	
	AZ4	Kaski, S. et al., "Bibliography of Self-Organizing Map (SOM) Papers: 1981-1997," [online] September 1998 [retrieved on 1999-03-05]. Retrieved from the Internet:<URL: <a href="http://www.icsi.berkeley.edu/~jagota/NCS/VOL1/P4_html/vol1_4.html">http://www.icsi.berkeley.edu/~jagota/NCS/VOL1/P4_html/vol1_4.html</a>	
	AR5	Cho, R. et al., "A genome-wide transcriptional analysis of the mitotic cell cycle," Molecular Cell, 2:65-73 (July 1998).	
	AS5	de Thé, H. et al., "The PML-RAR Fusion mRNA Generated by the t(15;17) Translocation in Acute Promyelocytic Leukemia Encodes a Functionally Altered RAR, Cell, 66:675-684 (August 1991).	
	AT5	Hartigan, J., "Clustering" in Clustering Algorithms, (NY:J. Wiley, 1975) pp. 1-27, 155-176.	
	AU5	Bamdad, C., "Surface Plasmon Resonance for Measurements of Biological Interest" in Current Protocols in Molecular Biology, (John Wiley & Sons, Inc.) pp. 20.4.1-20.4.12 (1997)	
	AV5	Eisen, M.B. et al., "Cluster analysis and display of genome-wide expression patterns," Proc. Natl. Acad. Sci. USA, 95:14863-14868 (December 1998).	
	AW5	Jain, A.K. and R.C. Dubes, Algorithms for Clustering Data, (Prentice-Hall), pp. 1-27, 118-142, 262-274 (1988).	
	AX5	Kakizuka, A. et al., "Chromosomal translocation t(15;17) in human acute promyelocytic leukemia fuses RAR with a novel putative transcription factor, PML," Cell, 66:663-674 (August 1991).	
	AY5	Höhfeld, J. et al., "Hip, a Novel Cochaperone Involved in the Eukaryotic Hsc70/Hsp40 Reaction Cycle," Cell, 83:589-598 (November 1995).	
	AZ5	Yoshida, H. et al., "Accelerated Degradation of PML-Retinoic Acid Receptor (PML-RARA) oncoprotein by All-trans-Retinoic Acid in Acute Promyelocytic Leukemia: Possible Role of Proteasome Pathway," Cancer Res., 56:2945-2948 (July 1996).	
	AR6	Höhfeld, J. and S. Jentsch, "GrpE-like regulation of the hsc70 chaperone by the anti-apoptotic protein BAG-1, EMBO Journal, 16(20):6209-6216 (1997).	
	AS6	Russell, L. and D. Forsdyke, "A Human Putative Lymphocyte G0/G1 Switch Gene Containing a CpG-rich Island Encodes a Small Basic Protein with the Potential to Be Phosphorylated," DNA AND CELL BIOL., 10(8):581-591, (1991).	
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	AT6	Oliva, M. et al., "Promoter regulation of a differentially expressed gene in the human colonic epithelial cell lines HT29-18 and HT29-18-C1, Gene 159(1):151-157 (1995).	
	AU6	Beck, S. et al., "DNA Sequence Analysis of 66 kb of the Human MHC Class II Region Encoding a Cluster of Genes for Antigen Processing," J. Mol. Biol. 228:433-441 (November 1992).	
	AV6	"GeneChip Probe Array Synthesis," [online] March 1998 [retrieved on 1998-10-15]. Retrieved from the Internet:<URL: <a href="http://www.affymetrix.com/technology/synthesis.html">http://www.affymetrix.com/technology/synthesis.html</a>	
	AW6	Chu, S. et al., "The Transcriptional Program of Sporulation in Budding Yeast," Science, 282, 10/23/98 (pp. 699-705).	
	AX6	Kalocsai, P., et al., "Visualization and analysis of Gene Expression Data," Journal of the Association for Laboratory Automation 4(5): 58-61 (1999).	
	AY6	Miyakis, et al., "Differential Expression and Mutation of the ras Family Genes in Human Breast Cancer," Biochemical and Biophysical Research Comm., 251: 609-612 (1998).	
	AZ6	Shiosaka, T. and Tanaka, Y., "Expression of Selected Genes and Oncogenes in Differentiated HL-60 Cells and Primary Cells from Human Leukemias," Anticancer Research, 9:1249-1264 (1989).	
	AR7	Ben-Dor, A., et al., "Tissue Classification with Gene Expression Profiles," Journal of Computational Biology, 7(3/4) 559-583 (2000).	
	AS7	Xiong, M., et al., "Computational Methods for Gene Expression-Based Tumor Classification," Biotechniques, 29: 1264-1270 (2000).	
	AT7	Dougherty, E., "Small sample issues for microarray-based classification," Comparative and Functional Genomics, 2: 28-34 (2001).	
	AU7	Park, et al., "A Nonparametric Scoring Algorithm for Identifying Informative Genes From Microarray Data," Pacific Symposium on Biocomputing, pp. 52-63 (2001).	
	AV7	Watson, M. A., et al., "Gene Expression Profiling with Oligonucleotide Microarrays Distinguishes World Health Organization grade of Oligodendrogliomas <sup>1</sup> ," Cancer Research, 61: 1825-1829 (2001).	
EXAMINER		DATE CONSIDERED	